

Battery & Backup Power System Testing Services

An independent reference for verifying stored-energy and standby power reliability to international standards



Field testing of stationary battery banks and backup power systems, carried out to international maintenance standards

Backup power exists for one moment: the moment mains supply fails. Whether it protects a hospital, a data centre or an industrial process, that protection is only as reliable as the battery bank behind it. Batteries degrade silently, and a system that looks healthy can still fail under load, which is why independent field testing is the only way to confirm that stored energy will be there when it is needed.

▪ What battery testing detects

Systematic testing reveals problems long before an outage exposes them:

- Loss of capacity and shorter backup runtime
- Rising internal resistance in cells and blocs
- Weak, aged or imminently failing cells
- Loose or corroded inter-cell connections
- Incorrect float and charging voltages
- Overheating and thermal-runaway risk

▪ Why independent testing matters

A verified backup system gives operators the assurance to:

- Confirm the system meets its rated autonomy
- Replace cells on evidence, not guesswork
- Avoid unplanned downtime and data loss
- Extend battery service life through correct upkeep
- Meet insurance and compliance obligations
- Plan capital spend on battery replacement

A backup system is only proven once it has been tested under load, before the outage, not during it



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Scope of Services

Battery and backup-power testing carried out by Mizan follows the maintenance and performance practices of IEEE 450, IEEE 1188 and IEC 62040, so that results are accurate, repeatable and defensible.

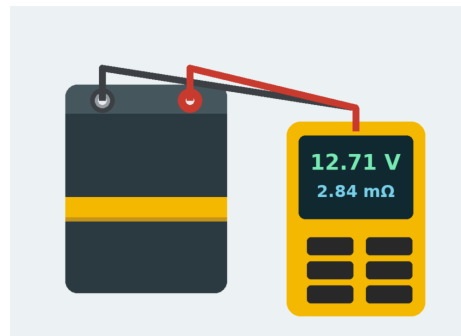
- **Battery bank testing**
 - Capacity (discharge / load-bank) testing
 - Internal resistance and impedance measurement
 - Cell and bloc voltage and float-charge checks
 - Inter-cell connection resistance and thermography
- **Backup power system testing**
 - UPS functional and transfer testing
 - Autonomy (runtime) verification under load
 - Generator and ATS changeover testing
 - Charger and rectifier performance checks
- **Applications**
 - Data centres and telecom facilities
 - Hospitals and critical healthcare systems
 - Industrial plants and process control
 - Substations and utility protection systems
 - Commercial buildings and emergency systems

Technical Reports to IEEE, IEC & NFPA Standards

In preparing test reports, Mizan applies a documentation and analysis methodology aligned with IEEE 450, IEEE 1188, IEC 62040 and NFPA 110, ensuring results that are clear, traceable and dependable for decision-making.

The technical reports issued by Mizan include the following:

- Measured capacity expressed against rated capacity, with backup runtime to IEEE 450 and IEEE 1188
- Internal resistance and impedance trends, with weak cells identified and ranked
- Float voltage, ripple and inter-cell connection resistance results
- UPS performance and transfer behaviour assessed to IEC 62040
- Standby readiness evaluated against NFPA 110 and IEC 62485 safety requirements
- The location and likely impact of every non-conformity, with clear replacement and maintenance recommendations



Internal-resistance and voltage testing identifies weak cells before they fail

Reliable backup power is proven by testing, not assumed



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